

What is claimed is:

- 1b
1c2
1. A separation element comprising:
(a) two or more hollow ^{pleated} pack sections, each pack section having first and second ends and an interior and including a porous medium comprising a polymeric material or a glass fiber material;
(b) joiner caps attached to at least one end of each of the two or more pack sections, adjacent joiner caps being connected to coaxially secure the pack sections and joiner caps into a hollow separation arrangement being at least about forty inches in length and having an interior diameter of at least about two inches; and
(c) first and second end caps attached to the hollow separation arrangement, wherein one of the first and second end caps comprises a seal having an outside diameter greater than the largest outside diameter of the hollow separation arrangement.
2. A separation element comprising:
(a) a hollow pleated pack having first and second ends and an interior and including a porous medium comprising a polymeric material or a glass fiber material, the hollow pleated pack being at least about forty inches in length and having an interior diameter of at least about two inches; and
(b) no more than two end caps, each end cap being connected to an end of the pack.
3. A separation element comprising:
(a) a pack including a porous medium and a first end; and
(b) an end cap including a first segment mounted to the first end of the pack and a second segment spaced from the first end of the pack, the end cap being extendable from a first position in which the first and second segments are spaced a first distance from each other to a second position in which the first and second segments are spaced a second distance from each other, the second distance being greater than the first distance.
- 54

4. A separation element comprising:

- (a) a pack including a porous medium and a first end; and
(b) an end cap having a first segment, a second segment mounted to the first end of the pack, and a sealing member coupled to at least one of the first and second segments, the first segment slidably engaged to the second segment such that the first segment is movable between first and second positions, wherein in first position, the sealing member is relaxed, and in the second position, the sealing member is compressed by the first and second segments, thereby energizing the sealing member.

5. A separation assembly comprising:

- (a) a support cage; and
(b) a separation element of claim 1, 2, 3 or 4 removably disposed in the support cage.

6. A separation system comprising:

- (a) a housing having an inlet and an outlet defining at least one fluid flow path; and
(b) a separation element of claim 1, 2, 3 or 4 disposed in the housing in the fluid flow path.

7. A separation assembly comprising:

- (a) a support cage; and
(b) a separation element removably mounted in the support cage, the separation element comprising a pack having an inner region and first and second ends and including a porous medium having pleats in a laid-over pleat configuration, a retainer arranged with the pack to maintain the pleats in the laid-over configuration, and first and second end caps connected to the first and second ends of the pack, the separation element being free of any support structure in the inner

region of the pack.

8. A separation assembly comprising:

- (a) a support cage having a first end; and
- (b) a separation element removably mounted in the support cage, the separation element including a pack and at least one end cap mounted to the pack, the at least one end cap being extendable to allow the separation element to move from a position removed from the first end of the support cage to a position in proximity to or contact with the first end of the support cage to reduce loading on the separation element.

9. A separation assembly comprising:

- (a) a support cage having a first end;
- (b) a seat arrangement; and
- (c) a separation element removably mounted in the support cage, the separation element including a pack and at least one end cap mounted to the pack, the at least one end cap including a seal arrangement slidably engaging the seat arrangement, the separation element being axially movable within the support cage from a first position wherein the seal arrangement engages the seat arrangement and the separation element is spaced from the first end of the support cage to a second position wherein the seal arrangement engages the seat arrangement of the separation element is closer to the first end of the support cage.

10. A separation assemblage comprising:

- (a) a tubesheet including at least one opening therein; and
- (b) the separation assembly of claim 7, 8 or 9 mounted to the tubesheet at the first opening;

11. A separation system comprising:

- (a) a housing having an inlet and an outlet defining at least one fluid

flow path; and

(b) a separation assembly of claim 7, 8 or 9 positioned in the housing, the separation element being disposed in the fluid flow path.

12. An end cap for capping an end of a separation pack comprising:

(a) a first segment including a first surface mountable to the end of the separation pack; and

(b) a second segment including a sealing surface, wherein the first and second segments are extendably connected such that the second segment is movable relative to the first segment.

13. A separation element comprising:

(a) a separation pack having a first end; and

(b) the end cap of claim 1 attached to the first end, the first segment being mounted to the first end of the separation pack.